



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003.238	10/26/2001	Carlos A. Gonzalez	884.535US1	5267

21186 7590 08/16/2006

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

MITCHELL, JAMES M

ART UNIT PAPER NUMBER

2813

DATE MAILED: 08/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/003,238	Applicant(s) GONZALEZ ET AL.	
	Examiner James M. Mitchell	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-29,35-40 and 46-52 is/are pending in the application.
- 4a) Of the above claim(s) 37-40 and 48-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-29,35,36,46 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/20/06, 8/29/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to applicant's remarks filed April 20, 2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22-29, 35, 36, 46 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Chaudhuri et al. (U.S. 6,660,560).

Chaudhuri¹ (Fig. 1-7) disclose:

(cl. 22) a component package, an underfill material (10) over a plurality of pads (26) in a component-mounting area of a substrate, the underfill material comprising a filler material containing particles (24), a component (20) on the component-mounting area, such that terminals of the component are aligned with corresponding pads (Fig. 4) and substantially enveloped in the underfill material, the particles potentially inhibiting (e.g. "silica") suitable connection between corresponding terminals (22) and pads unless the particles are substantially removed; with one or more particles being embedded in ("substantially unimpeded"; Abstract) one of the terminals, in its corresponding pad, or in both the one terminal, and terminals to physically contact the pads and to remove

substantially all potentially inhibiting particles ("substantially unimpeded"; Abstract) from between corresponding terminals and pads (Fig. 6-7) (cl. 24) with solder on pad (e.g. terminal (Abstract); (cl. 26, 29) wherein filler ("silica"; CLM 11 of Chaudhuri); (cl. 46) fluxing agent (CLM of 3 of Chaudhuri).

With respect to claims product by process limitations of claims 22-29, 35, 36, 46 and 47 such as "applying suitable pressure by...thermocompression bonder," "applying suitable pressure and heat are performed concurrently by apparatus, " or "pads are pre-coated with solder...applying heat," the prior art structure is the same as the claimed invention. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Response to Arguments

Applicant's arguments filed April 20, 2006 have been fully considered but they are not persuasive. Applicant contends that Chaudhuri is not prior art, because the 1.131 declaration filed January 20, 2004 establishes an invention date prior to January 5, 2001. Examiner respectfully disagrees.

¹ Note the 1.131 is ineffective for the reasons stated infra. However, even if applicant was able to antedate this reference the claimed invention would still be anticipated by prior art, see for example Estes (U.S. 6,189,208) and Feigenbaum that explicitly disclose AIO embedded in its bump.

The declaration filed on January 20, 2004 under 37 CFR 1.131 is ineffective to overcome the reference, because applicant has failed to either provide evidence of actual reduction to practice prior to the critical date or establish conception and due diligence. Pursuant to M.P.E.P 715.07[R-3], the evidence submitted is insufficient to establish/corroborate conception of the potentially inhibiting particles embedded in a terminal, pad or both. The exhibits provided only evidence a process of "squeezing out ...particles in between the bumps," as indicated for example in Exhibit A. In addition, the evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Chaudhuri reference to either a constructive reduction to practice or an actual reduction to practice. The entire period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. See M.P.E.P 2138.06 [R-1]. For the reasons stated above, applicant's arguments are found unpersuasive and the rejection deemed proper.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2813

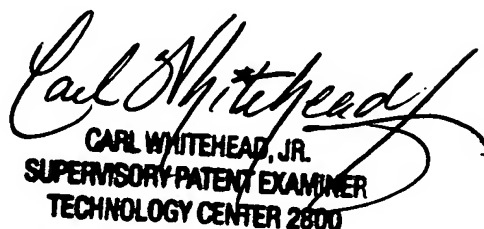
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jmm, J.D
August 8, 2006


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800